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On The Use of The Cold Affusion In Certain Diseases.

Bolitha Laws

An

Inaugural Essay,

on

The Remedial Efficacy

of

The Cold Affusion;

in

Certain Diseases.

By

Bolitha Laws

of Dover Delaware.

Passed March 20th 1823

"Nullum est jam dictum, quod
non dictum prius." Terence.*

November 1822.

* Lat. Lib. 2

To

The Medical Professors

In

The University of Pennsylvania,

This Essay

is

Respectfully Dedicated,

as

A Tribute of Respect to them,

Individually as Gentlemen, and

collectively as forming

The First Medical School

In

The United States.

by the Author

Bolitha Laws

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Preface.

In selecting the following subject for my Inaugural Dissertation, I am not conscious that I am about to advance anything which has peculiar claims to originality of thought, or which has never been sanctioned by the experience, and supported by the reflections of others. But in obedience to that law, which requires every candidate for a Degree of Medicine, to write an Essay on some medical subject, the following treatise, the first fruit of a Medical education, is submitted for your examination: and I shall have attained my object if it should be found, that I have arranged and properly explained a subject, which is interesting and important to the Profession, by a proper disposition and comparison of the sentiments of those who have gone before me, and by fair deductions from the facts which they have established.

Indeed the time which is allotted to a Student for the prosecution of his Medical Studies, is so short, and the Authors that have written on every subject in Medicine are so numerous, that little more can be expected in an Inaugural dissertation than a compilation of facts selected from the best Authors. Even

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the conclusion and accompanied you from the moment
of leaving [illegible] of a book, [illegible] you, [illegible]
by experience, [illegible] perfect [illegible]; [illegible]
[illegible] [illegible] told us: "If you adhere to
me [illegible], you are invulnerable [illegible]
[illegible] and [illegible] of [illegible] in
practice will have [illegible] to [illegible] fact, [illegible]
[illegible] of [illegible], and maturity of judgment, which should carry you through your profession
and [illegible] with confidence of peace of mind."* It is
with diffidence and not without apprehensions of failing
in the attempt, that I venture on the undertaking. Here
to whom the story is not matter, I feel confident will make
every allowance for youth and inexperience, which the
details of their stations will permit. It may, it is
important to state some of my reasons for selecting the
following subject for my theses. Considering the
power of cold bath in demonstrating animal heat
when morbidly increased, and the benefit which
many persons have derived from its use, while
labouring under nervous and other affections, I
have, for some time, thought that it might be
more extensively employed in disease, than at pr

* John Bell's principles of Surgery

[illegible] Cautions. This opinion has
been founded partly on observation of the beneficial effects,
which many persons have derived, from visiting the
Mineral springs in various sections of the [illegible] country.
I shall not enter into the discussion, which has
so long divided the Medical World, with respect
to the real cause of benefit to those visitors; whether
the salutary effects, which have been observed, be
attributable to abstaining from business, or to labor
and the agreeable company usual at such places, or to the medicinal virtues
existing in the Mineral waters. I am inclined
to believe, that all these are of those then
combined together, and that the emaciated debilitated
invalid is more speedily restored to health by
a concurrence of favorable circumstances, than
by the single efficacy of any one of them. I also
believe that more benefit is ascribable to the other
causes assigned, than to that of the Mineral impregnation, and that the latter is never productive
of any good unless taken internally. I will just
add that in my reading Dr. Cheyne's "Medical
Tracts" on the cold and warm water system, in

Velocity and the diseases, it was struck with the utmost astonishment, and persevering industry, with which he conducted his experiments with respect to the cold effusion. In this Pharmacopœia, we are indebted for many facts, which, pertaining to my day, were unknown. His diligence in ascertaining by thermometrical observation, the actual heat of the animal system, in certain diseases, rendering his work of the highest practical importance, and affording a great deal for pathological speculations. These are some of the considerations which influenced me in the selection of this subject: and though I do not expect applause, I trust I shall escape censure, when it is known that I exhibit with reluctance what I have been compelled to write in compliance with that law, which knows no partiality, and which must stand as a lasting monument of the wisdom of its framers.

Preliminary Remarks

In treating of the practical application of the cold affusion, I shall select those diseases in which it has been most conspicuously serviceable. To mention all the diseases wherein the cold bath has been found useful, would extend this essay to an unreasonable length of prolixity. I shall confine my remarks to the [illegible] [illegible], to Typhus Fever and Small-pox, and shall add a few observations on Intermittent and Remittent Fever. The extent of the subject which I have undertaken, will not permit me to consider the minutiae of the (diseases of which we are to treat; If it did I would not) hesitate to acknowledge my incompetence to the task.

I have preferred the Affusion to the Aspersion, because the shock made on the system is more sudden, more powerful and lasting; and to Immersion, because it is attended with the process of evaporation, relieved more speedily from its preternatural heat, while

[illegible] the [illegible] of [illegible] [illegible] [illegible].

Shall we make a few remarks on the nature of [illegible] the [illegible] Bath by different [illegible] for the purpose of illustrating the power of the system in resisting the injurious tendency of the sudden vicissitudes of heat and cold.

Turning to the pages of Antiquity we find the use of the cold bath in bathing. The first authentic accounts we have of its use will be found in the early part of the history of Greece. Alcamenes, a famous Greek sculptor, is said to have been the person who first prescribed it. His first experiments are said to have been made on the [illegible] of the [illegible] of Elis, [illegible]. At the remote period of antiquity, it is not to be expected that we should be able to ascertain accurately the circumstances which gave rise to its use. The cold-bath baths are, as of Pociet, been established in the greater part of the world. [illegible] with the Greeks, and particularly the

Romans, carried it, proves the correctness of this assertion. The Baths of Rome, in point of number and magnificence, remain unparalleled in the pages of history. Among the causes which conspired to the decay of the Roman Republic, may justly be ranked the excessive indulgence of her citizens in the use of bathing. The manner in which the Romans carried the use of the hot and warm baths, is well known; it is described by all historians, as one of the greatest excesses to which that nation was enslaved. For the purpose of increasing the luxury of the bath, they were in the habit of bathing alternately in the warm and cold baths. This fashion of repetition proving ineffectual, the baths were made hot, and after being immersed for some time in a bath of the increased temperature, the men and women received successive buckets full of cold water from a person stationed at the bath. This for a time increased the pleasure of bathing, but finally destroying sensibility, weakening the body, and enervating the mind, hastened on that total degeneration and putrefaction from which the nation never recovered. In the language of imperial Rome, the last of the

Romans, the followers of Zeno and Cato were melted down into pleasure; the powers of their minds became enfeebled, the vigour of their frames decayed, and they lost forever the last impressions of freedom and of virtue."

The Ablutions enjoined by different nations in the [illegible] were [illegible] in their Religious Ceremonies. It is much to be regretted that the [illegible] In the summer season when the body is loaded with perspirable matter, the frequent use of it [illegible] of the highest importance. That it has thus been disregarded appears the more singular, as [illegible] washing the body was incorporated with the [illegible] of the Jews, and even by the primitive Christians it was deemed of paramount utility, both as a preservative of health, and as preparing their minds for those pure devotional exercises, in which they were engaged. Bathing, this almost obsolete practice, has however, been happily revived, not only with the view of fortifying the system against the attacks of disease, but has become one of the most potent remedies in the hands of the Physician. The successful treatment of fevers, that grand avenue to Death, has ever been a desideratum among the

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[illegible]

[illegible] man. [illegible] nature, it has [illegible] in the talents and energies of the wisest, and greatest; but human intelligence and ingenuity has been defeated in its object. no medicine, has yet been found to be an invariable cure for the formidable enemies of mankind. notwithstanding these discouraging facts, men [illegible] [illegible] legions at the peril of their existence, by [illegible] flying, than all the long and complicated lists of compounds, prescribed by the old school [illegible]. The manner of using the bath among the Russians, although different in some respects, is analogous to that of the Romans. Their bodies are heated in a bath at the temperature of from 110°. to 160°. of Fahrenheit's thermometer, and on leaving the bath they roll naked in the snow, and so return to the warm bath and the snow alternately. The experiments of [illegible] Charles Blagden, — Dr. Fordyce and others show that a [illegible] temperature the system is capable of supporting without injury. Dr. [illegible] remained in a room heated to the temperature of 240°. and 260°. [illegible] thermometer, and out in the cold air with impunity. —

The following [illegible] are said to have

been succeeded in performing cures by their manner of bathing, which consists in exposing the body of the patient to a heated and moist atmosphere, produced by throwing hot stones in a tub of water; after remaining in this for some time and until the body is covered with a profuse perspiration, they then leave the room and plunge into the River. When the women enter the Yuchi river in their mass, a universal bath is taken. They relieve opinion perspiration by the vapour which rises, and at night and morning, mix turmeric powder with the aqueous vapour which constitutes the bath. Perfumed soaps and pomatums are exhausted, and costly essences are lavished in profusion to gratify the senses. The Women wash in Rose-water, blacken the edges of their eyelids, (and lengthen their eyebrows with a preparation of Tobacco (or a preparation of lime burnt with gall-nuts) they also stain their finger and toe-nails with Henna, which gives them a golden colour, and finally the purest steam of the most fragrant, is passed through the linen and clothing which they wear. ——— I shall now proceed to the more immediate subject of this essay. —

"Each side [illegible] of disease [illegible],
And shuddering fever ~~[illegible]~~ bends the [illegible] ?"
[illegible]

Intermittent fever just claims our attention. No inconsiderable portion of the diseases of our climate are the results of long protracted intermittents. Although intermittents, in their ordinary form, are easily eradicated, we occasionally find them of the most intractable nature. Intermittent fever is too well known to require a definition. This form of fever is most prevalent in Autumn, when it appears in this County as an endemic disease. There are cases however in which the latent predisposition is not called into active until late in the winter, when from the operation of some exciting cause intermittents are produced. They sometimes however are not manifested until the spring. Sometimes they make their appearance earlier than usual, and we not infrequently see them in the middle of summer. But, as I have been said, they are the most prevalent in Autumn. This is easily to be accounted for by the well known causes of Intermittents.

marsh miasmata and animal and vegetable putrefaction, acting, with greater [illegible] at this season of the year than at any other. The [illegible] [illegible] [illegible] the [illegible] [illegible]. The exciting causes are [illegible] [illegible] [illegible]. All those causes which produce debility, as intemperance in eating or drinking, exposure to cold and moist atmosphere, night air and fatigue, may be said to operate as such agents. The disease [illegible] is seated in the stomach. [illegible] [illegible] [illegible] [illegible] repeated distinct paroxysms, and each paroxysm of three stages, the cold, hot and sweating. Practitioners have made the treatment [illegible] three distinct stages of the disease: first, in the cold to excite the hot; secondly, in the hot, to [illegible] the sweating; thirdly, in the interval or apyrexia, to prevent the recurrence and give strength to the system. Various methods have been recommended to fulfil these several indications, of which it does not come within my province to speak. I shall [illegible] [illegible] [illegible] first

[illegible]

[illegible]

[illegible] the [illegible] effect [illegible] the [illegible] [illegible] the [illegible] [illegible].

Thirdly, the [illegible] of the patient, [illegible] [illegible] [illegible] [illegible].

Fourthly, it should not be [illegible] [illegible] [illegible] [illegible] [illegible] [illegible].

Fifthly, it should not be [illegible] [illegible] [illegible] [illegible] applied [illegible] the tongue, or [illegible] the patient.

Sixthly and lastly, Attention is to be paid to the state of the system and the effect produced. Under these restrictions the cold affusion may be used in almost all diseases.

Surgery from the effects of the cold affusion in disease of consideration, we have no reason to admit its use in that form in intermittent fever, or chronic inflammation. From the impression made on the

system, but the idea [illegible] [illegible]
[illegible] to [illegible] in the [illegible] intermittent [illegible]
[illegible] depending on the [illegible] [illegible], we [illegible]
[illegible] the ordinary [illegible] of intermittent [illegible]
[illegible] to the [illegible] such remedies as make a sudden and powerful impression on the system.
If this reasoning be correct, [illegible] should be regarded more favorably as to the [illegible]
[illegible] in the consideration than the [illegible] [illegible]
[illegible] the cold affusion applied [illegible] in a [illegible]
[illegible] to [illegible] the expected paroxysm, tends to [illegible]
the recurrence of the chill, by the reaction which follows its application. Even in the hot-stage of fever, it [illegible] heat and thirst, which [illegible] [illegible] diaphoresis and a solution of the paroxysm.
The frequent use of it in the apyrexia of fever, [illegible] with the system and [illegible] [illegible], to dissolve the morbid concatenations, upon which the disease acts depend. Combined with other [illegible], I am inclined to believe that there is no

case of intermittent fever which must be pre-
ceded by the patient cured.

The Cold Affusion has been found useful
[illegible]
[illegible] Hospital of [illegible]
[illegible] been "[illegible]
[illegible] the [illegible]
[illegible] in [illegible] on an
immediate [illegible], [illegible] the
[illegible] and [illegible] fever [illegible] in the
[illegible] fever to which he [illegible] prevail quod [illegible] brown". The [illegible]
also informs us, that he met with great success with
the cold affusion in the [illegible] of [illegible]
[illegible]. The imported [illegible]
the late [illegible] [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] have
[illegible] [illegible] the [illegible] of experiment [illegible]
[illegible] [illegible] [illegible],

[illegible]

[illegible] "[illegible] though [illegible]

[illegible] the [illegible] of this [illegible]: [illegible]

[illegible] occasion, but the

[illegible] the end one [illegible] has [illegible]

[illegible] the nature of the [illegible]

[illegible] consists [illegible]

[illegible] in mind, that is danger

[illegible] it may [illegible] [illegible]

[illegible] used, or [illegible]. [illegible]

[illegible] employed [illegible] failed of [illegible]

good in some instances. [illegible] not with [illegible]

[illegible] the [illegible] [illegible] [illegible]

[illegible] [illegible] feel that it did not

[illegible] [illegible] [illegible] [illegible]

[illegible] tendency, not impeding [illegible]

[illegible]

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[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible]

[illegible] of the disease the [illegible], the [illegible] and [illegible] symptoms are [illegible] [illegible]. The disease is generally ushered in with nausea and vomiting, and severe anxiety about the præcordia, dejection of spirits, pains in the head, back, and limbs, anxiety and confusion of thought. After the disease has lasted for some time, these symptoms are aggravated, to which is added restlessness, great debility, tremors, [illegible] delirium, convulsions and death. This is the course of the fever when not arrested in its progress.

Numerous are the Authors that have written on, and various are the remedies that have been recommended, in this disease. Of the treatment [illegible] [illegible] I shall only notice two, Doctor Hamilton and Currie.

At first view Doct. Hamilton's practice would appear unwarrantable. But the success which attended it shows it superior over the ordinary mode of treating typhus fever. He commenced with the administration of an emetic, which was followed up by

the daily [illegible] [illegible], generally [illegible] [illegible]
ned with [illegible], [illegible], [illegible], [illegible] [illegible] [illegible] other
purgative [illegible] [illegible] [illegible] [illegible], and occa
sional [illegible] [illegible] [illegible]. By, with some trifling
variation, consisted his mode of treatment. Dr. Doctor
Hamilton intended that by his frequent use of purga
tive medicines, you not only remove from the stomach
the accumulated faeces, but you also remove
from the intestines the scybala, which are generally
collected on their internal surface, and thus not
only remove a source of irritation upon which the
continuance of the fever depends, but also ren
dered to the alimentary canal, and from thence
to the whole system through the medium of sympa
thy. In short, he contended that the purge, so far
from debilitating the patient, acted as a stimulant
to the system, lessening the symptoms, cutting short
the appearance of this disease, which was a bad
method, and taking into consideration the exten
sive chain of sympathies which will be seen the

alimentary canal, on the part of the [illegible] to
attend the practicability of the practice. But at the same time, I am inclined to give the preference to Dr. Cullen's manner of treating typhus fever. Should be wrong in this preference, it is because my experience is so limited in this climate, that I cannot have decided, but not yet taught me the correct method of treating a malady, so common, so much dreaded. While I give the preference to the cold affusion, purging as an auxiliary is not to be lost sight of. Dr. Cullen's manner of administering the cold affusion, consisted in pouring repeated buckets-full of cold water on the patient in the commencement of the fever, at a period when the sensation of the heat of the patient's body was felt to be natural, and when the pulse was not too much exhausted. He recommends the affusion to be applied as soon as possible after the attack. Although this practice may attended with more uniform success, yet it is not to be applied, [illegible]

from supposing, when administered in the highest and worst stage of the disease. When early applied, it cuts short the disease at once, and when given in the more advanced stages of fever, it strengthens the system and prevents that fatal termination which is so apt to take place in this disease. Dr [illegible], Physician to the House of Recovery or Fever Hospital in London, and who has had considerable experience with the cold affusion, and the result of which experience goes to confirm the reports given by Dr. Currie, speaks to the following purport: "It appears unnecessary to relate the other cases in which the cold affusion had been used. In all, the good effects of it have been strikingly manifest, and in no instance, has the disease terminated fatally after the use of this remedy. In the early stages of typhus the affusion, either alone, or with a little [illegible], appears to cut short the progress of the disease.

In the more advanced period, when the strength of the patient is supposed to admit the application of this remedy, it moderates the violence of the symptoms, and [illegible] make [illegible] a favorable termination."

The mixture of vinegar and water is supposed to be better [illegible] than simple water. From the experiments made by Dr. Currie with a saturated solution of Muriate of Soda, he thinks the water is not only more [illegible] stimulating, but that the sedative effects of the affusion are thereby elicited. The immediate effects of the cold affusion are as follows; it diminishes heat, allays thirst, removes anxiety, alleviates pain and produces a determination to the surface, which is speedily followed by diaphoresis and sleep. Its more permanent effects are those of a tonic [illegible] and increasing the energy of the system. In the advanced stages of typhus where the vital powers are much depressed, the superiority of the tepid affusion or sponging the body with vinegar and water, over the cold affusion cannot be denied; in such cases the Author of the "Reports" was in the habit of preceding the cold affusion by

the administration of some of the diffusible stimulants, such as wine, ether, volatile alkali and such other stimulating cordials as would be likely to rouse the Medicatrix Naturæ to increased efforts.

This treatment is unavailable in some cases of this disease, they can be no doubt. This is indicated in a manner, not by the pulse, but by the high flushed cheek, burning heat of the skin, and the increased temperature of the patient. All the other symptoms may appear in a mild form, but the consideration of this have escaped, merely as being the most characteristic symptoms of the disease. This fact is admitted by most physicians, besides being proved by the accurate thermometrical experiments of Dr Currie.

From the prejudice which exists in the minds of the lower orders of society, the other reason is not likely to be the main cause of the prevailing practice; but in cities, in hospitals, and other public institutions, this practice prevails more, according to my opinion, than any

other medical treatment. During the prevalence of epidemic disease, we are told, that by the general use of the cold bath, the dangerous phenomena shewn by the impression of contagion or infectious matter is diminished, and a protection is thereby conferred not to be obtained by any other means. This has been which has not in the 31st Regiment of Soldiers quartered at Inverness, in the year 1797, and by the Author of the "Report," on the usual means for preventing the disease from spreading were used without effect; and it was finally arrested by the use of the cold bath. The second, a Medical Student in the University of Pennsylvania, mentioned in the Lancet, while he was in Edinburgh, fifteen hundred miles distant, was attacked with typhus fever and was carried to the hospital in that place. The symptoms were pain in the head, heat of skin, and great restlessness all which were removed immediately by the cold affusion.

Although in this country the cold affusion has not met with such general support, it is now thought gaining ground. Professor Chapman

recommended it in diphtheria, but he prefers sponging the body with water to the application. With the few desultory remarks already made I shall dismiss the order Exanthemata, and proceed with the consideration of Small-pox.

Small-Pox.

My remarks on this disease will be few in general. This is the first genus of the order Exanthemata, and first in Cullen, and in Sydenham:— "Incipit hæc cum rigore, et, ex sententia Sydenham, dolore. Mense die incipit, et quinto fere die papulæ pustulæ, phlegmonodeirium, etc., desinit in secundum, in suppurationem, et incrustatione circum circum, recipe cicatrices deponendo, sic desinunt, commendes." I suppose he meant the Cow-pox, by the introduction of vaccination into practice, has become a more rare disease than formerly. This improvement in

medicine, by the ingenious Dr Jenner, has also done away the necessity of the ancient common practice of Inoculation. Previous to the practice of Vaccination the true effect of this disease was not known. The melancholy pages of Medicine must never attest the number of the unfortunate victims who were sacrificed to hideous Moloch. This disease is one, which may truly be called contagious. Here we have the specific matter of contagion, elaborated by a glandular pouch, with matter, is capable of the propagation independent of situation, season, climate, age or sex. Of this disease some practitioners have made two species, the distinct & malignant, confluent & benignant. These two species are the same disease, produced by the same specific cause and modified only by the peculiarities of constitution. In the former, the febrile symptoms are of the synocha, & the eruption large. In the latter, the febrile symptoms are more remitting, & the eruption more numerous and confluent. In the former the symptoms in the confluent small pox are more aggravated and consequently more dangerous. The diseases are fully treated upon with respect

[illegible] the [illegible] of small [illegible] [illegible] [illegible]

[illegible] authority that it [illegible] [illegible] only [illegible], it should [illegible] [illegible] [illegible] fevers. Although in this disease, we can not, as in [illegible] other of the exanthemata, [illegible] the disease at pleasure, we can mitigate its symptoms, and thereby render the patient more comfortable, and prevent those digestions which generally supervene, and which to females is of considerable importance. As the eruption depends, rather upon the fever which precedes it, being a crisis of the fever; it is evident that all those measures which tend to lessen fever, will mitigate this disease, and prevent cold effusion in febrile affections, I have already mentioned. From the foregoing observations it is obvious, that no remedy with more advantage to this sex, during the incipient or eruptive fever of variola. To confirm this part of my doctrine, I have no higher authority than the following emphatic remarks of Dr McCurrie "This recovery can arise, that in [illegible] cases [illegible] have used the effusion of a pint [illegible] the eruptive fever, however severe the symptoms may have been, these symptoms instantly

alation, and the disease instantly assumed a benignant form." As the pathological view thus has been of small place, the modus operandi of the Cold Effusion will be readily understood.

I conclude the limits of this Essay, further, lest it should be deemed improper or inconsistent with the true descriptive words which it was written. For an apology for the delivery of experimental matter would therefore be unnecessary, even if it were at all garnish it, and the introduction of it were within the scope of my intention. The subject has long been neglected by Many Practitioners in this Country, and the Authors who have treated of it have either slumbered on the Shelf or their Works have never been regarded. The importance of the remedy considered has caused me to extend this Essay beyond the boundaries usually prescribed on such an occasion, but if the facts which are collected in it should be thought of sufficient weight to induce any to review or extend this practice so much benefit to mankind in this Country, I have an ardent wish for the measure, I have offered this trifling.

Nothing therefore remains for me to add but to tender to the Medical Professors my most sincere thanks for that politeness and attention which have marked their Conduct since I have been their pupil. The path to knowledge in all Professions is laborious and gloomy.— In ours it is perhaps peculiarly so, and would be rarely traversed with success were it not irradiated by the light of you who have gone before us.— A light which from the summit of Professional reputation exhibits at once the mazes of error and the ascent to truth, and whose cheering influence is proportioned to the height and distance of the eminence upon which it glitters.

Finis.